

application. As the Examiner has acknowledged, however, Jesmanowicz et al. does not explicitly teach storing of information that is independent of the picture elements, this independent-of-picture-elements information including the aforementioned image-related evaluation correlation value, as well as information indicating whether the image was registered with or without stimulation of the subject. The Examiner relied on the Rittman, III et al. reference as providing such a teaching. As discussed below, Applicant does not agree that such a teaching is provided by Rittman, III et al., but even if it were, Applicant submits that such a teaching would be incompatible with the disclosure of Jesmanowicz et al., and therefore modifying Jesmanowicz et al. in accordance with such an alleged teaching would not have been obvious to a person of ordinary skill in the field of processing functional magnetic resonance images.

This is because all of the processing that is disclosed in the Jesmanowicz et al. reference is undertaken solely on the image itself, i.e. the pixels thereof, and therefore even if there were a teaching in some other reference to provide information unrelated to the processing of the pixels themselves, this would either serve no purpose in the context of the Jesmanowicz et al. processing, or would be redundant because such information is already obtained by the pixel processing. In every embodiment disclosed in the Jesmanowicz et al., either the pixels themselves are directly processed or analyzed, or use is made of a result that is obtained by analyzing or comparing pixels. Therefore, in the Jesmanowicz et al. reference, every "output" is either directly obtained from, or is derived from, the pixels, and thus any informational content of that "output" is embodied in the pixels themselves. Applicant assumes this is why the Examiner acknowledged that the Jesmanowicz et al.

reference does not explicitly teach storing of image data that is different from the image itself. This “missing” teaching, however, is not something that can be simply added to the Jesmanowicz et al. reference, if found in another reference, but results from the fundamental principles disclosed in the Jesmanowicz et al. reference for the image processing that is described therein.

Turning now to the Rittman, III et al. reference, Applicant does not agree that the Rittman, III et al. reference provides the aforementioned teaching. The Rittman, III et al. reference concerns a completely different type of system, and therefore addresses completely different problems, from the system disclosed in the Jesmanowicz et al. reference. The Rittman, III et al. reference concerns a high-frequency generator used to produce targeted therapeutic lesions or tissue alterations at a patient. The lesions or tissue alterations are generated by a high-frequency source connected with electrodes, and a two-dimensional computer graphic menu interface is provided for operating the system. Specific parameter sets that are frequently used can be stored in the memory of the system, and can be recalled via the menu, as described at column 2, lines 6-10. In column 5, lines 36-42, for example, it is mentioned that images obtained with a magnetic resonance imaging apparatus also can be imported and displayed, but there is no disclosure or suggestion in the Rittman, III et al. reference that there is any type of analysis of such MR images nor is there any disclosure of, or reason for, linking information with those imported MR images relating to the acquisition of the images or the evaluation thereof. Such information would serve no purpose in the Rittman, III et al. reference, and would be ignored by the user because it would serve no purpose in the context of the use of the Rittman, III et al. system.

Therefore, Applicant is unable to ascertain why the Examiner believes such teachings are present in Rittman, III et al., based on the passages of Rittman, III et al. cited by the Examiner. In column 7, lines 41-49, for example, it is merely explained that the treatment parameters for the high-frequency generator can be selected by selection of a suitable icon. The passage at column 10, lines 34-35 also describes such treatment parameter sets. Even if an MR image were imported, as noted above, and were somehow linked with these parameter sets, these parameter sets would have nothing to do with the acquisition or evaluation of the MR image itself, but would only apply to the treatment parameters for operating the high-frequency system. The term "stimulation" used in the Rittman, III et al. reference in this context clearly does not have any meaning whatsoever with regard to stimulation as occurs in the production of functional magnetic resonance images. The term "stimulation" when used in the Rittman, III et al. reference is always used in the context described above, namely the application of high-frequency energy to produce the aforementioned therapeutic lesions or tissue alterations.

Therefore, not only does a person of ordinary skill in the field of functional magnetic resonance imaging processing have no basis whatsoever to combine the teachings of Jesmanowicz et al. and Rittman, III et al., but even if such a combination were made, this would not be comparable to any of the claims of the present application.

Claims 1-15 also were rejected under 35 U.S.C. §103(a) as being unpatentable over Jesmanowicz et al. in view of Albert. This rejection also is traversed for the following reasons.

The aforementioned discussion of the Jesmanowicz et al. reference applies equally to this rejection. The Albert reference concerns a computer input device that allows the input of “dynamic mental information such as visual mental imagery” (column 1, lines 15-18). This is also described in column 1, line 45 through column 2, line 8 of the Albert reference. The system disclosed in the Albert reference, through the use of magnetic resonance imaging, purports to be able to present an electronic display of images that are actually being seen by a person, by obtaining magnetic resonance signals from the visual cortex in the brain of the person. For this purpose, the patient is shown a test image so that activity in the V1 region (containing the visual cortex) can be associated with specific information in the test image, to allow a calibration of the system to be made. This is described at column 2, lines 9-13.

Therefore, although a magnetic resonance apparatus 110 is used in the system described in the Albert reference, it is simply a tool that provides a computer input. There is no teaching or reason in the Albert system to undertake any type of diagnosis or analysis of the magnetic resonance image in response to stimulation of the patient. The ultimate goal of the system disclosed in the Albert reference is to obtain dynamic mental imagery so as to capture and interpret the user’s visual thoughts (column 4, lines 47-48). In the next sentence (column 4, lines 49-50) it is stated that the MRI machine 110 may be located adjacent to the user’s head such as in a headrest on the user’s chair. This would clearly inform a person of ordinary skill in the field of magnetic resonance imaging that the inventor has no real familiarity with magnetic resonance imaging, since not only can a magnetic resonance apparatus not be made that small, but also it must be operated in a controlled clinical

environment for safety reasons to the extremely high magnetic fields. Moreover, a chair would most likely contain some type of metallic elements which would be extremely hazardous in the environment of a magnetic resonance imaging apparatus, and also would introduce serious artifacts into the image. This passage by itself would be sufficient to cause a person of ordinary skill in the field of magnetic resonance imaging to be highly suspicious of anything else that is disclosed in the Albert reference.

Nevertheless, even if the statements in the Albert reference are accepted at face value, it has no relevance to the subject matter of the present application, nor to the system disclosed in the Jesmanowicz et al. reference. According to the Albert reference, the anatomical structure of the brain is initially established and stored and an evaluation of an image is undertaken at a subsequent time, without any additional information. The evaluation result is then stored. The same is true for the subsequent generation of a map that allows mapping of 3D geometry to the 2D geometry, which produces a transformation function that is then also stored. As noted above, functional magnetic resonance images are acquired according to the Albert reference while test object patterns are being observed by the patient. These functional images are also evaluated and stored and image information is associated therewith. Lastly, distortion (noise) information is determined and data for removal of the distortions is stored. It is therefore clear that any evaluation disclosed in the Albert reference takes place immediately when all of the aforementioned data have been acquired, and once a usable image is obtained, it is only this usable image that is then made available for display. Therefore, even if additional information might be used in the Albert reference to produce this image, it is not made available with the

display of the image as additional information that is independent of the pixels (image content) of the displayed image. Moreover, there is no need for the display of any such information in the Albert reference, in view of the aforementioned goals thereof.

Therefore, Applicant submits that even if the Jesmanowicz et al. system were modified in accordance with the teachings of Albert, the subject matter of the claims of the present application still would not result. Moreover, in view of the completely different field of the Albert reference, and in view of the obvious deficiencies in the disclosure of that reference, if a person of ordinary skill in the field of functional magnetic resonance imaging had the insight to modify the Jesmanowicz et al. reference in accordance with the disclosure of the Albert reference, Applicant submits this would be an insight supporting patentability, rather than a reason for precluding patentability.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

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